



Market Dynamics of Guava in Haryana: Analyzing Price Spread and Marketing Efficiency

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Abstract— This research paper analyzes the price spread and marketing efficiency of guava in Haryana through different distribution channels, shedding light on the complexities and nuances of guava supply chains. Four distinct marketing channels were identified, varying in the involvement of intermediaries between producers and consumers. Channel I, involving only producers and consumers, exhibited the highest marketing efficiency due to the absence of intermediaries. Conversely, Channel IV, the most intricate channel with multiple intermediaries, displayed the lowest marketing efficiency. Furthermore, the study delineates significant constraints faced by guava farmers in Haryana, with nematode infestation, inadequate sapling quality, and fruit fly damage emerging as the top challenges. These insights into market dynamics and challenges faced by farmers provide valuable knowledge to enhance guava cultivation and marketing strategies in the region. The study also identifies a need for targeted interventions to address specific constraints and improve the overall guava supply chain in Haryana, ultimately benefiting both producers and consumers.



Keywords— Guava marketing, price spread, marketing efficiency, supply chain, Haryana

I. INTRODUCTION

Guava farming is an essential component of agricultural practices, contributing significantly to the horticultural economy. However, guava farmers encounter various challenges related to price spread and marketing, ultimately affecting their overall productivity and livelihoods. The term "price spread" refers to the difference or spread between the price at which farmers sell their produce and the price at which consumers purchase the same product in the market. Understanding and addressing price spread issues are crucial for achieving fair returns for farmers and ensuring affordable prices for consumers. The arrivals and prices for both are negatively correlated and accordingly it was observed in Pune, Ahmednagar and Nashik APMC markets for guava crop (Kumbharet *et al.*, 2014).

In India, the area under guava cultivation during 2023-24 was 361.44 thousand hectares with a production of 5368.05 thousand metric tonnes. During the same

period, Haryana had an area of 16.75 thousand hectares and production of 183.64 thousand metric tonnes (GoI, 2024).

In the context of guava farming, marketing encompasses the processes involved in getting guava produce from the farmer to the end consumer. Effective marketing involves stages such as transportation, storage, processing, packaging, and distribution, all aimed at meeting consumer demand efficiently and at reasonable prices. However, guava farmers often face complexities and limitations in the marketing process, hindering their ability to reach wider markets and maximize profits. Furthermore, guava farmers grapple with an array of constraints that impact their ability to cultivate, market, and sell their produce effectively. These constraints may include biological challenges like pest infestations and crop diseases, technical barriers such as lack of knowledge about modern farming techniques, limited access to irrigation facilities, inadequate infrastructure, market fluctuations, and insufficient market information.

Addressing these constraints is crucial to enhance the sustainability and profitability of guava farming, ensuring a consistent supply of quality produce to consumers while empowering farmers economically. Finding solutions to these challenges can significantly improve the livelihoods of guava farmers, foster agricultural growth, and contribute to the overall development of the horticulture sector.

II. METHODOLOGY

The present study was conducted in Hisar, Nuh and Yamunanagar districts of Haryana state, which was selected purposively on basis of highest area and production under guava cultivation. Each district represents a distinct agro-climatic zone and socio-economic context, providing a broader understanding of guava cultivation practices across different regions. From each district 20 farmers were selected. A total of 60 farmers were interviewed for collection of data. Primary data pertaining to the year 2022-23 were collected from selected respondents by conducting personal interviews with help of specifically designed schedule. The different market functionaries such as contractors, commission agents, retailers and consumers were randomly selected from the market in the study area. The data collected from the different market functionaries were analyzed to estimate the marketing costs and margins through important marketing channels. The market channels of guava were examined by selecting a random sample of such intermediaries as pre harvest contractors, wholesalers, commission agents and the retailers. Information regarding the marketing pattern/ channels of guava was collected from the producers and marketing agencies involved in the marketing of guava through different channel. Information was also obtained from the market intermediaries involved in the purchase of guava with in the village and in the market. The relevant data were collected with the help of a pre tested, well designed schedule. Information regarding marketing aspects of guava was collected from the producers and the retailers in order to find out the producer's share in the price paid by the consumers. The main channels in operation in the marketing of guava were studied to work out the price spread. To estimate the marketing costs and margins through important marketing channels was used for computing the marketing margins. From the gross margins, the costs incurred by the concerned agencies were deducted to arrive at the net margins. The marketing efficiency of different marketing channels were worked out by using the following method.

(a) Shepherd's Method (ME), (Acharya and Agarwal, 2011)

$$ME = \frac{RP}{MC}$$

Where, RP = Retailer's sale price or consumer's purchase price

MC = Total marketing costs

(b) Acharya's Method (MME), (Acharya and Agarwal, 2011)

$$MME = \frac{FP}{MC + MM}$$

Where, FP = Net price received by farmer

MC = Total marketing costs

MM = Total net margins of intermediaries

(c) Conventional method, (Acharya and Agarwal, 2011)

$$Efficiency = \frac{O}{I} \times 100$$

Where, O= output is the value added

I= input is the real cost of marketing

E= marketing efficiency

III. RESULT AND DISCUSSION

The findings of the study are discussed below:

Price spread of guava in Haryana

Price spread of guava in Haryana is presented in Table 3. The table outlines different distribution channels for guava supply chains, delineating the flow of guava fruit from producers to consumers through various intermediaries. Channel I having two participants; Producer and Consumer, is the simplest distribution channel, where the producer directly sells the product to the end consumer without involving any intermediaries. Channel II having participants are Producer, Retailer and Consumer. In this channel, the producer sells products to retailers, who then sell them to the end consumers. The retailer acts as an intermediary between the producer and the consumer. Channel III having participants are Producer, Commission Agent cum Wholesaler, Retailer and Consumer. This channel involves an additional intermediary, the commission agent cum wholesaler. The producer sells products to the commission agent cum wholesaler, who then sells them to retailers, and the retailers, in turn, sell to the consumers. Channel IV has participants: Producer, Pre-harvest Contractor, Commission Agent cum Wholesaler, Retailer and Consumer. Channel IV is the most complex distribution channel mentioned. It involves multiple intermediaries before reaching the end consumer. The producer initially

engages a pre-harvest contractor, who oversees the pre-harvest activities. The produce is then sold to a commission agent cum wholesaler, who further sells it to retailers. Finally, retailers sell the product to the end consumers. Similar findings were also reported by (Bairwaet *et al.*, 2012).

Table 3: Price spread in guava via different marketing channels

Channel – I	Producer– Consumer
Channel – II	Producer – Retailer – Consumer
Channel – III	Producer – Commission agent cum wholesaler – Retailer – Consumer
Channel – IV	Producer – Pre-harvest contractor- Commission agent cum wholesaler – Retailer – Consumer

Table 4 showed the marketing efficiency of guava in Haryana under different marketing channels. Marketing efficiency according to Acharya's method (Modified Measure of Marketing Efficiency) under different marketing channels i.e. channel I, channel II, channel III and channel IV were 13.07, 1.48, 0.65 and 0.30

respectively. From this efficiency index it could be observed that channel I was the most efficiency among all marketing channels. This is because of the fact that in channel I intermediaries are not involved and hence this channel was most efficient than all other channels. Moreover, marketing efficiency increased with the decreased in market intermediaries between producer and consumer.

The marketing efficiency according to Conventional method under different marketing channels i.e. channel I, channel II, Channel III and Channel IV were 1.00, 2.37, 3.50 and 5.50 respectively. From this efficiency index it could be observed that channel IV was the most efficiency among all marketing channels. The marketing efficiency according to Sephard's method under different marketing channels i.e. Channel I, Channel II, Channel III and Channel IV were 14.07, 5.89, 5.77 and 7.13 respectively. From this efficient index it could be observed that channel I was the marketing efficiency among all marketing channels. Similar findings were also reported by Chaluvadi *et al.*, (2019), Sainet *et al.*, (2013), Singh *et al.*, (2020)

Table 4: Overall average marketing efficiency of guava under different marketing channels

S. N o.	Particulars	Channel I	Channel II	Channel III	Channel IV
		Producer – Consumer	Producer –Retailer – Consumer	Producer – wholesaler – Retailer – Consumer	Producer – Pre-harvest contractor- wholesaler – Retailer – Consumer
1	Consumer purchase price(RP)	3861.87	4397.74	4879.32	5571.81
2	Total marketing cost (MC)	274.40	747.03	845.63	782.00
3	Total net margin of intermediaries (MM)	0.00	1024.26	2113.95	3519.61
4	Net price received by farmers	3587.47	2626.45	1919.74	1270.20
5	Value added	274.40	1771.29	2959.58	4301.61
Marketing efficiency					
A	Conventional method	1.00	2.37	3.50	5.50
B	Shepherd's method	14.07	5.89	5.77	7.13
C	Achary's method	13.07	1.48	0.65	0.30

The results of table 5 provides an insightful overview of various constraints faced by farmers in guava cultivation, outlining the farmers' responses as a percentage and the corresponding ranking of each constraint based on their perceived severity. The most pressing challenge, as identified by a significant majority

of farmers (87%), is the nematode problem in guava plants, securing the top rank (I). Nematodes, which are microscopic worms, can cause substantial damage to guava plants, affecting their growth, yield, and overall health. Following closely is the constraint of a lack of quality saplings, acknowledged by 81 per cent of farmers,

earning it the rank of II. This constraint emphasizes the crucial role of high-quality saplings in successful guava cultivation, highlighting concerns regarding the availability or quality of saplings for planting. Damage caused by fruit flies during the rainy season emerged as the third most prominent constraint, with 77 per cent of farmers recognizing its impact, granting it the rank of III. Fruit-fly infestation can lead to a reduction in guava fruit quality and quantity, posing a significant challenge during specific weather conditions. The fourth-ranked constraint, identified by 73 per cent of farmers, is the lack of technical knowledge about pruning and crop regulation. Farmers highlighted the importance of adequate knowledge and skills in proper pruning and crop regulation practices for optimizing guava production. Lack of canal water for irrigation facilities, ranking V, was acknowledged by 62 per cent of farmers. Insufficient irrigation, especially from reliable water sources like canals, can adversely affect guava plants' growth and productivity. Lastly, the constraint of lacking market information ranked VI, with 23% of farmers recognizing its significance. Having adequate knowledge about markets and consumer demand is crucial for successful market participation and selling produce at a fair price. Similar findings were also reported by Singh *et al.*, (2022), Singh *et al.*, (2013)

Table 5: Constraints faced by Guava farmers in Haryana
n=60

Constraints	Farmers response (%)	Rank
Nematode problem in guava plants	52(87)	I
Lack of quality sapling	49 (81)	II
Damage due to fruit-fly in rainy season	46(77)	III
Lack of technical knowledge about pruning and crop regulation	44 (73)	IV
Lack of canal water for irrigation facilities	37(62)	V
Lack of market information	14(23)	VI

IV. CONCLUSION

This study was conducted for marketing of guava in Haryana. In total, 60 farmers were sampled from Mewat, Yamunanagar and Hisar district of Haryana.

According to Acharya's method channel I was the most efficiency among all marketing channels. This is because of the fact that in channel I intermediaries are not involved and hence this channel was most efficient than all other channels. Moreover, marketing efficiency increased with the decreased in market intermediaries between producer and consumer. Major problems faced by the guava growers were damage due to Nematode problem in guava plants (87%) followed by lack of quality sapling (81%). In constraints underscores the multifaceted challenges that guava farmers face, ranging from biological factors like nematode infestations and fruit-fly damage to issues concerning resource availability (such as quality saplings and irrigation water) and knowledge gaps. Addressing these constraints effectively is vital to enhancing guava cultivation and ensuring better yields and economic returns for the farmers.

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